Sana Biotechnology Announces Publication in Nature Biotechnology of in vivo Gene Editing of Human Hematopoietic Stem Cells in Preclinical Models Using the Fusogen Platform

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Data Demonstrate Potent in vivo Gene Editing of Hematopoietic Stem Cells (HSCs) in the Bone Marrow with Systemic Delivery in Preclinical Murine Models Using Fusogen Technology

Broadens Application of Fusogen Technology Beyond T Cells to Second Cell Type, HSCs, Showing Potent and Specific in vivo Delivery

Underscores Ability of Fusogen Technology to Deliver Diverse Payloads, including CRISPR Gene-Editing and Base-Editing Machinery

Highlights Potential of Fusogen Platform in Diseases like Sickle Cell Disease and Beta Thalassemia Without the Need for Conditioning Chemotherapy

Sana is Incorporating its Fusogen Technology to Develop SG293, a CD8-targeted Fusosome that Makes CD19-directed CAR T Cells in vivo; Expects to File IND for SG293 in B-cell Cancers and/or B-cell Mediated Autoimmune Diseases as Early as 2027

SEATTLE, Dec. 08, 2025 (GLOBE NEWSWIRE) -- Sana Biotechnology, Inc. (NASDAQ: SANA), a company focused on changing the possible for patients through engineered cells, today announced that *Nature Biotechnology* has published a journal article titled "*In vivo* gene editing of human hematopoietic stem and progenitor cells using envelope-engineered virus-like particles" (DOI: 10.1038/s41587-025-02915-2). The article evaluated a systemically delivered virus-like particle (VLP) using Sana's fusogen technology to target and gene edit hematopoietic stem cells (HSCs) *in vivo*. Results show potent and cell-specific *in vivo* gene editing of HSCs in the bone marrow in several murine models, with stable gene-editing of long-term HSCs.

In vivo gene editing of HSCs in the bone marrow has the potential to transform the treatment of many diseases involving these important progenitor cells, including sickle cell disease and beta thalassemia. *In vivo* delivery can overcome many of the limitations of bone marrow transplants and current *ex vivo* gene editing approaches, including the need for high doses of conditioning chemotherapy with the risk of severe infections and secondary cancers, complex manufacturing, and prolonged hospitalization. An ideal *in vivo* delivery system should be capable of efficiently reaching long-term multipotent HSCs in their natural bone marrow niche, avoiding off-target cells in organs such as the liver, and delivering the reagents necessary for gene editing or base editing of clinically relevant loci in human HSCs.

"The fusogen technology has now shown the potential to offer cell-specific, *in vivo* delivery of various payloads into multiple cell types, and we believe it can be an important technology to treat a variety of diseases," said Dhaval Patel, MD, PhD, Sana's Chief Scientific Officer. "Earlier this year, we showed the ability to specifically deliver genetic material to CD8+ T cells to make *in vivo* CAR T cells while avoiding potentially troublesome delivery to liver and gonadal tissues. We look forward to continuing to develop this technology as we work toward an IND for SG293, which makes CD19-directed CAR T cells, for the treatment of various cancers and autoimmune diseases. This publication highlights another application of the fusogen platform for potent and cell-specific *in vivo* delivery of gene-editing and base-editing reagents to HSCs, broadening the diseases we can target with the potential to deliver transformative clinical impact, significantly reduced side effects through the elimination of conditioning chemotherapy, and a simplified supply chain."

Key Findings from The Publication

1. Optimized VLP enables potent *in vivo* editing in long-term human HSCs and editing of two hemoglobinopathy-relevant loci, including fetal hemoglobin.
2. Gene-editing VLP with targeted fusogen technology avoids off-target delivery to hepatocytes with systemic delivery.

About Sana
Sana Biotechnology, Inc. is focused on creating and delivering engineered cells as medicines for patients. We share a vision of repairing and controlling genes, replacing missing or damaged cells, and making our therapies broadly available to patients. We are a passionate group of people working together to create an enduring company that changes how the world treats disease. Sana has operations in Seattle, WA, Cambridge, MA, and South San Francisco, CA.

Cautionary Note Regarding Forward-Looking Statements
This press release contains forward-looking statements about Sana Biotechnology, Inc. (the "Company," "we," "us," or "our") within the meaning of the federal securities laws, including those related to the Company's vision, progress, and business plans; expectations for its development programs, product candidates, and technology platforms, including its preclinical, clinical, and regulatory development plans and timing expectations, including the timing of filing investigational new drug applications and potential indications for its product candidates; the potential impact and significance of data from preclinical studies of the Company's product candidates and technologies, including the fusogen technology, including the potential ability to transform of treatment of diseases involving HSCs, including sickle cell disease and beta thalassemia, and overcome many of the limitations of bone marrow transplants and current *ex vivo* gene editing approaches, including high doses of conditioning chemotherapy with the risk of severe infections and secondary cancers, complex manufacturing, and prolonged hospitalization; the potential ability of the fusogen technology to efficiently reach long-term multipotent HSCs in their natural bone marrow niche, avoid off-target cells in organs such as the liver, and deliver the reagents necessary for gene editing or base editing of clinically relevant loci in human HSCs; the potential ability of the fusogen technology to offer cell-specific, *in vivo* delivery of various payloads into multiple cell types, treat a broad range of diseases, and deliver transformative clinical impact, significantly reduced side effects through the elimination of conditioning chemotherapy, and a simplified supply chain; and statements made by the Company's Chief

Scientific Officer. All statements other than statements of historical facts contained in this press release, including, among others, statements regarding the Company's strategy, expectations, future operations, and prospects, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "aim," "anticipate," "assume," "believe," "contemplate," "continue," "could," "design," "due," "estimate," "expect," "goal," "intend," "may," "objective," "plan," "positioned," "potential," "predict," "seek," "should," "target," "will," "would," and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology. The Company has based these forward-looking statements largely on its current expectations, estimates, forecasts, and projections about future events and financial trends that it believes may affect its financial condition, results of operations, business strategy and financial needs. In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of future events. These statements are subject to risks and uncertainties that could cause the actual results to vary materially, including, among others, the risks inherent in drug development such as those associated with the initiation, cost, timing, progress and results of the Company's current and future research and development programs, preclinical and clinical trials, as well as economic, market, and social disruptions. For a detailed discussion of the risk factors that could affect the Company's actual results, please refer to the risk factors identified in the Company's Securities and Exchange Commission (SEC) reports, including but not limited to its Quarterly Report on Form 10-Q dated November 6, 2025. Except as required by law, the Company undertakes no obligation to update publicly any forward-looking statements for any reason.

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